



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,242	02/11/2004	Toshiya Koyama	118652	9908
25944 7590 02/21/2008 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER FUJITA, KATRINA R	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 02/21/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/775,242

Applicant(s)

KOYAMA ET AL.

Examiner

Katrina Fujita

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to Applicant's remarks received on February 04, 2008. Claims 1-8 remain pending.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Specification***

3. The previous specification objections have been withdrawn in light of Applicant's amendment and remarks.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana et al. (US 2001/0053246) and Weast et al. (US 6,931,151).

Regarding **claims 1 and 8**, Tachibana et al. discloses a document processing apparatus and method (figure 1, numeral 30; "application for displaying or editing a document" at paragraph 0029, line 4) comprising:

a determination unit (figure 1, numeral 33) that determines at least some of a plurality of colors contained in input document data as a determined color group (figure 4, numeral S420; "pre-processing for specifying the target color to be converted with predetermined range" at paragraph 0044, line 9);

a retrieval unit (figure 1, numeral 33) that determines a set of the colors contained in the determined color group as a confusion color set based on confusion color information defined in association with color blindness of a human being in a predetermined color component space ("a color that a user whose color vision is impaired can not easily discriminate is specified in advance as a target color to be converted" at paragraph 0049, line 1); and

a processor (figure 2, numeral 203) that performs a predetermined process for portions of the colors contained in the confusion color set determined by the retrieval unit in the input document data ("pre-processing required for the succeeding color conversion is performed" at paragraph 0049, line 4).

Tachibana et al. does not disclose that the retrieval unit determines an association between the colors in the determined color group based on one or more criteria and determines the confusion color set based on the association.

Weast et al. teaches a system and method in the same field of endeavor of modifying color content for color blind individuals ("color blind systems and more particularly to filtering graphics to enable color-blind viewing" at col. 1, line 9) comprising:

a retrieval unit (figure 1, numeral 14) that determines an association between the colors ("analysis of shade properties could indicate a grouping of two or more distinct colors arranged such that a color-blind person would be unable to detect the presence of two separate shades" at col. 6, line 48) in the determined color group ("computer graphics content" at col. 2, line 48) based on one or more criteria ("shade properties" at col. 6, line 48; "grouping" at col. 6, line 48), determines a set of the colors contained in the determined color group as a confusion color set ("problematic graphics content" at col. 2, line 50) based on the association and confusion color information defined in connection with color blindness of a human being in a predetermined color component space ("predefined color profiles that identify which graphics may be problematic for color challenged users" at col. 2, line 48).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the color-blind filter of Weast et al. to determine the confusion set of Tachibana et al. to modify only "selected graphics data into color corrected data suitable for a visually challenged viewer" (Weast et al. at col. 5, line 49).

Regarding **claim 6**, Tachibana et al. discloses that the predetermined color component space contains a lightness component of each of the colors in the determined color group ("maximum luminance is set for a pertinent color (by setting the color elements to 0 or 255)" Tachibana et al. at paragraph 0051, line 2).

Tachibana does not disclose that the retrieval unit removes an attention color from the confusion color set when the attention color contained in one of the confusion color set and other one or more colors contained in the confusion set differ in lightness on color vision characteristics of a human being.

Weast teaches a system wherein the retrieval unit removes an attention color from the confusion color set ("content is not problematic for color-blind users (step 508), no modifications are made" at col. 9, line 48) when the attention color contained in the confusion color set and other one or more colors contained in the confusion color set differ in lightness on color vision characteristics of a human being ("analysis of shade properties could indicate a grouping of two or more distinct colors arranged such that a color-blind person would be unable to detect the presence of two separate shades" at col. 6, line 47).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the color-blind filter of Weast et al. to determine the confusion set of Tachibana et al., to modify only "selected graphics data into color corrected data suitable for a visually challenged viewer" (Weast et al. at col. 5, line 49).

Regarding **claim 7**, the Tachibana et al. and Weast et al. combination discloses an apparatus wherein

the predetermined color component space contains a lightness component of each of the colors contained in the determined color group ("maximum luminance is set for a pertinent color (by setting the color elements to 0 or 255)" Tachibana et al. at paragraph 0051, line 2); and

the retrieval unit does not determine whether or not colors of the confusion color set differ in lightness on the color vision characteristics of a human being are confused with each other (as the shade properties of the images are evaluated with respect to predefined color profiles, content that different in luminance would be determined as unproblematic for a dichromat and therefore be passed over).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana et al. and Weast et al. as applied to claim 1 above, and further in view of Meyer et al. ("Color-Defective Vision...", IEEE Article).

The Tachibana et al. and Weast et al. combination discloses that the retrieval unit determines some of the plurality of colors as the confusion color set when some of the plurality of colors in the determined color group are contained in a predetermined range (figure 8; "if all the extracted color elements (R, G, B) lie within a range extending from the maximum to the minimum value of the predetermined color that was set, the pertinent color is deemed to be such predetermined color" at paragraph 0048, line 17) defined in the proximity of one attention confusion color in a confusion color group defined so as to contain confusion colors in color blindness in the color component

space ("color that a user whose color vision is impaired can not easily discriminate is specified in advance as a target color to be converted" at paragraph 0049, line 2).

The Tachibana et al. and Weast et al. combination does not disclose that the attention confusion color is a confusion color locus in a confusion color locus group.

Meyer et al. teaches a system in the same field of endeavor of modifying color content for color blind individuals ("introduces the above-mentioned fundamental color space and shows how it can be used to assist in the design of computer graphics displays for color-deficient users" at page 1, right column, line 8) wherein the attention confusion color is a confusion color locus in a confusion color locus group (figures 3, 4, 5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art for the color profiles of the Tachibana et al. and Weast et al. combination to be defined by the confusion loci taught by Meyer et al. as described above, to eliminate unnecessary processing by further limiting the criteria of what constitutes a confusion color.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana et al. and Weast et al. as applied to claim 1 above, and further in view of Takamura et al. ("Constructing a Uniform Color Space...", IEEE Article).

The Tachibana et al. and Weast et al. combination discloses that the retrieval unit determines a confusion color set of the colors contained in the determined color



group based on confusion color information in association with color blindness of a human being as described in the 103 rejection above.

The Tachibana et al. and Weast et al. combination does not disclose determining which blocks previously defined in the predetermined color component space for each of the colors in the determined color group belongs to and determining a confusion color set based on block-to-block confusion color information associating blocks confused with each other in color blindness in association with color blindness of a human being and information of a block to which each of the colors contained in the determined color group belongs.

Takamura et al. teaches a method in the same field of endeavor of transforming color spaces ("constructing a uniform color space" at section 1, paragraph 5, line 2) that determines which of blocks previously defined in the predetermined color component space (figure 4, triangular segments) for each of the colors contained in the determined color group belongs to (figure 4, each MacAdam ellipse contains triangular segments) and determines a confusion color set ("visually imperceptible color reproduction" at section 1, paragraph 3, line 2) based on block-to-block confusion color information associating blocks confused with each other in color blindness in association with color blindness of a human being (figure 4, defined by the MacAdam ellipses) and information of the block to which each of the colors contained in the determined color group belongs (each block has a defined space in the color space).

It would have been obvious at the time the invention was made to one of ordinary skill in the art for the color profiles of the Tachibana et al. and Weast et al. combination

to determine the confusion color set using the color space construction taught by Takamura as described above, to "reduce the amount of coding bits needed to make a virtually lossless decoded image" (Takamura, at section 5, paragraph 1, line 6).

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana et al. and Weast et al. as applied to claim 1 above, and further in view of Meyer et al. and Oleari ("Uniform-Scale Chromaticity...", Color Research & Application).

The Tachibana et al. and Weast et al. combination discloses that the retrieval unit determines the plurality of colors as a confusion color set when one attention confusion color in a confusion color group defined so as to contain confusion colors in color blindness in the color component space passes through the inside of the defined nearby area (figure 8; "if all the extracted color elements (R, G, B) lie within a range extending from the maximum to the minimum value of the predetermined color that was set, the pertinent color is deemed to be such predetermined color" Tachibana et al. at paragraph 0048, line 17).

The Tachibana et al. and Weast et al. combination does not disclose that the attention confusion color is a confusion color locus in a confusion color locus group.

Meyer et al. teaches a system in the same field of endeavor of modifying color content for color blind individuals ("introduces the above-mentioned fundamental color space and shows how it can be used to assist in the design of computer graphics displays for color-deficient users" at page 1, right column, line 8) wherein the attention

confusion color is a confusion color locus in a confusion color locus group (figures 3, 4, 5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art for the color profiles of the Tachibana et al. and Weast et al. combination to be defined by the confusion loci taught by Meyer et al. as described above, to eliminate unnecessary processing by further limiting the criteria of what constitutes a confusion color.

The Tachibana et al., Weast et al. and Meyer et al. combination does not define a nearby confusion area provided based on the color vision characteristics of a human being or characteristics of an output medium in the predetermined color component space for each of the colors in the determined color group and determine a confusion color set when one attention confusion color locus passes through an inside of the defined nearby confusion area.

Oleari defines a nearby confusion area provided based on the color vision characteristics of a human being or the characteristics of an output medium in the predetermined color component space for each of the colors contained in the determined color group ("these ellipses represent one standard deviation in color-matching at constant luminance" at paragraph 2, line 2) and determines a color confusion set when one attention confusion color locus passes through the inside of the defined nearby confusion area (figure 1 and 3).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the color profiles of the Tachibana et al., Weast et al. and Meyer combination using the MacAdam ellipses taught by Oleari as described above, to eliminate unnecessary processing by further limiting the criteria of what constitutes a confusion color.

### ***Response to Arguments***

Summary of Remarks (@ response page labeled 8): "Thus, there is nothing in Tachibana that discloses an association between colors of a determined color group".

Examiner's Response: The Examiner has withdrawn the 102 rejections of claims 1 and 8 and has made 103 rejections as noted above.

Summary of Remarks (@ response page labeled 8): "None of the other applied references (Meyer, Takamura, Weast or Oleari) disclosed the above indicated association recited in claims 1 and 8."

Examiner's Response: The Examiner disagrees that the Weast reference does not disclose the association between colors of a determined color group. As shown in

the 103 rejections of claims 1 and 8 above on page 4 of the Office Action, the Weast reference

determines an association between the colors ("analysis of shade properties could indicate a grouping of two or more distinct colors arranged such that a color-blind person would be unable to detect the presence of two separate shades" at col. 6, line 48) in the determined color group ("computer graphics content" at col. 2, line 48) based on one or more criteria ("shade properties" at col. 6, line 48; "grouping" at col. 6, line 48)

As a result, the Weast reference evaluates the shade properties of a color grouping contained in the image in relation to each other.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

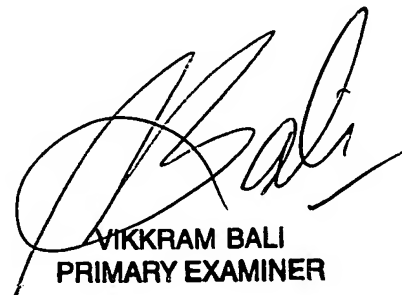
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katrina Fujita whose telephone number is (571) 270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katrina Fujita  
Art Unit 2624



VIKKRAM BALI  
PRIMARY EXAMINER